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A STUDY OF THE RHEOLOGICAL PROPERTIES OF ROAD ASPHALTS MODIFIED BY AN ADHESIVE ADDITIVE

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The characteristics of the rheological behavior of the original road asphalt BND 60/90 and asphalt modified by an adhesive additive are determined. It is shown that the activation energy of viscous flow of asphalt increases on modification and that an extremum is observed at additive content of 0.8 wt. %. The additive exerts a cross-linking effect resulting from formation of a more uniform spatial disperse structure. In this case, the cross-linking effect manifests itself at a particular additive concentration (0.8 wt. %) at which the asphalt system attains the most active state. It is demonstrated that peptization of asphalt aggregates by additive molecules at a high strain rate effectively prevents recombination of the structural elements of the oil disperse system.
Keywords: *oil disperse system, road asphalt, adhesive additive, rheology, viscous flow activation energy, thixotropy.*

Rheological properties of oil dispersion systems (ODS) depend significantly on their composition and, first of all, on the content of the basic structure-forming components. The most high-molecular components – resin-asphaltene substances (RAS), which are a dispersed phase, play the dominant role in the structure formation of heavy oil residues (HOR). Due to molecular van der Waals attraction forces acting between the asphaltene particles in the HOR, a coagulation type spatial structure appears. In addition to asphaltenes, paraffins can form a crystallization-type spatial structure at a temperature below the crystallization temperature,

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